

Docket No. HUANG04  
US App. No. 10/537,841 «APPLICATION\_NO»

### IN THE CLAIMS

1. (currently amended) A catalyzer for clean non-woody pulping, ~~characterized in that the wt% composition of said catalyzer includes comprising:~~

5 wt% - 9 wt% of sodium salicylate[[~~±5%—9%~~]];

2 wt% - 5 wt% of anion silicic acid silicate softener[[~~±2%—5%~~]];

3 wt% - 7 wt% of cooking aids[[~~±3%—7%~~]];

2.1 wt% - 3.7 wt% of liquid chlorine or gaseous chlorine[[~~±2.1%—3.7%~~]]; and

~~the remaining:~~ balance of water;

wherein said cooking aids includes:

~~hydrene volatile:~~ 0.01 wt% - 5 wt% of ethanol and/or ether[[~~±0.01—5%~~]];

~~free quinone:~~ 0.25 wt% - 35 wt% of concentrated sulfuric acid and/or carbon tetrachloride[[~~±0.25—35%~~]];

~~active matter:~~ 0.15 wt% - 30 wt% of basic Na<sub>2</sub>SO<sub>3</sub>[[~~±0.15—30%~~]]; and

~~the remaining:~~ balance of water.

2. (currently amended) The catalyzer for clean non-woody pulping according to claim 1, ~~characterized in that wherein~~ said cooking aids is prepared by forming a the solution which is the mixture of the emulsion thereof with a ~~the~~ concentration of 3% and, then mixing the emulsion with pure water, wherein said emulsion is formed of the raw material of cooking aids.

3. (currently amended) A process for using the catalyzer for clean non-woody pulping according to claim 1, ~~characterized in that all kinds of herbs are used as the raw material and comprising the following steps are included:~~

a) cutting and impurities removing[[[:]]];

wherein the a raw material is cut into pieces with the length of between 10mm and 15mm, the removal rate of remaining fringe, kernel as well as dust is above 95%;

b) feed preparation and impurities removing[[[:]]];

wherein the raw material is soaked in the catalyzer to prepare for 10-14 hours, the dry weight of the raw material is 3-8% of the weight of the catalyzer weight, ~~the~~ deposition and impurities removing are proceeded through a deposition channel provided at ~~the bottom of the a~~ bath for the feed preparation and impurities removing;

c) dividing into fibers by refining[[[:]]];

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wherein the raw material is divided into fibers through ~~a the~~ refining disc so that it is changed to rough fiber bundle;

d) catalysis copolymerization[[:]];

wherein the a pulp obtained from the above steps enters into a catalysis tower to perform catalysis copolymerization reaction for 10-14 hours at ~~the normal~~ ambient temperature and pressure;

e) refining:

wherein the pulp is grounded into ~~the required~~ a papermaking stock through a refiner;

f) concentration and separation[[:]];

wherein the pulp and the catalyzer are separated by a thickener, the papermaking stock with different concentration ~~may be~~ is separated according to ~~the requests~~ requirements, while the residual liquor of the catalyzer is recovered;

g) pulp bleaching[[:]];

wherein the bleaching is proceeded by ~~conventional~~ a bleaching equipment to obtain a bleached pulp;

h) pulp washing[[:]]; and

wherein the bleached pulp is washed in ~~the conventional~~ a pulp washing vessel, then ~~the a~~ finished pulp is obtained.

4. (currently amended) The process for using the catalyzer for clean non-woody pulping according to claim 3, characterized in that a submerged mesh is arranged on the bath for the feed preparation and impurities removing.

5. (currently amended) The process for using the catalyzer for clean non-woody pulping according to claim 3, characterized in that calcium hypochlorite is used for bleaching liquor, and ~~the a~~ supplying port of chlorine gas is added at ~~the a~~ recycle entrance of a fan pump, through which the chlorine gas is added intermittently during the bleaching to increase ~~the~~ available chlorine in the ~~whole~~ bleaching liquor so that the available content of bleaching liquor ~~can~~ remains constant during the whole bleaching process.

6. (currently amended) The process for using the catalyzer for clean pulping according to claim 3, characterized in that said raw material ~~herbs include~~ is selected from the group consisting of wheat straw, rice straw, straw stem, corn stalk, cotton straw or reed.

7. (new) A catalyzer for clean non-woody pulping comprising:

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5 wt% - 9 wt% of sodium salicylate;  
2 wt% - 5 wt% of anion silicate softener;  
3 wt% - 7 wt% of cooking aids;  
2.1 wt% - 3.7 wt% of chlorine; and  
balance of water;

wherein said cooking aids includes:

0.01 wt% - 5 wt% of ethanol and/or ether;  
0.25 wt% - 35 wt% carbon tetrachloride;  
0.15 wt% - 30 wt% of basic  $\text{Na}_2\text{SO}_3$ ; and  
balance of water.